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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,176	09/19/2003	Alexander A. Betin	PD-03W101	7104

23915 7590 10/07/2005

PATENT DOCKET ADMINISTRATION
RAYTHEON SYSTEMS COMPANY
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EXAMINER

NGUYEN, PHILLIP

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,176

Applicant(s)

BETIN ET AL.

Examiner

Phillip Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/19/03 & 6/20/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the aberrator" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites "a spatial filter between one or more of said amplifiers" which is not clear because if there is only one amplifier, the spatial filter cannot be located between one amplifier.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 4 and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell et al. ('323).

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With respect to claims 1-2 and 4, Campbell discloses in Fig. 5 a spatial filter including a means for increasing angular spread of non-conjugated energy and means for suppressing said angular spread non-conjugated energy wherein the means for increasing angular spread includes an aberrator (82) means for suppressing includes an opaque plate with a pinhole aperture therethrough (30).

With respect to claims 10-13, Campbell discloses a loop phase conjugate resonator comprising a first means for providing an interference pattern (col. 4, lines 63-68), an amplifier (64 or 70) and the filter as shown in the rejection of claim 1.

Claim 14 further recites method for spatial filtering. Since Campbell discloses the product, it is product by process for performing method as recited in the claim.

4. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki ('175).

With respect to claims 1-4, Suzuki discloses in Fig. 1-2 a spatial filter including a means for increasing angular spread of non-conjugated energy and means for suppressing said angular spread non-conjugated energy wherein the means for increasing angular spread includes an aberrator which is an amplifier 12/112 and means for suppressing includes an opaque plate 26 with a pinhole aperture therethrough .

With respect to claim 5, Suzuki discloses said means for suppressing includes a highly angle-selective thick Bragg grating (14/114 or 16/116).

With respect to claim 6, Suzuki discloses first and second lenses (22 and 24) disposed opposite sides of said means for suppressing (26/120).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell et al. ('323) in view of Abrams et al. ('268).

With respect to claim 7-9, Campbell discloses the claimed invention except for a master oscillator and means for creating a beam having phase conjugate energy and non-conjugated energy. Abram et al. discloses in Fig. 3 a conjugate amplifier including a master oscillator (30), a power amplifier beamline (20), means for creating a beam having phase conjugate energy and non-conjugated energy (80), and a spatial filter 32, except for the spatial filter as taught by Campbell which includes means for increasing angular spread of non-conjugated energy. For the improvement, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide the spatial filter with aberrator as taught by Campbell in order to create a phase conjugate master oscillator to Bischel. Campbell further discloses plural amplifiers 70 and 64 and the filter is located between an amplifier (64 or 70) and other components.

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With respect to claim 15, a method for phase conjugating is introduced. Since Campbell and Abrams disclose the product as recited in claim 7, it is product by process for performing method as recited in the claim.

Citation of Pertinent References

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Campbell et al. discloses Local Reference Beam Generator, U.S. Patent No. 5148323

The patent to Abrams et al. discloses Energy Scalable Laser Amplifier, U.S. Patent No. 4757268

Communication Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MINSUN OH HADLEY
PRIMARY EXAMINER